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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/977,684

10/16/2001

Dong-Gyu Kim

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3843

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01/30/2003

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EXAMINER

DI GRAZIO, JEANNE A

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,684

Applicant(s)

KIM, DONG-GYU

Examiner

Jeanne A. Di Grazio

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Priority to Korean Patent Application No. 2001-052829 for August 30, 2001 is claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. ('728 B2).

Per claims 1 and 6: A substrate and black matrix formed on the substrate are common in the art. Color filters formed on a substrate with a black matrix are common in the art. Tanaka has color filters and each has a flat central portion (Fig. 1C for example). In another embodiment of the Tanaka invention, the colored filter peripheries are tapered and the thickness of overlap portions of the black matrix and tapered peripheries of the colored portions is less than a thickness of centers of the colored portions (Col. 7, Lines 21-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine embodiments of Tanaka to prevent step formations in the area of the black matrix which in turn prevents disruption of liquid crystal molecular orientation and thus ensures good display quality. Tanaka also has a common electrode formed on the color filters (Col. 6, Lines 33-35).

Per claim 5: Tanaka has neighboring color filters spaced apart from each other with a predetermine distance (Fig. 1C). It would have been obvious to one of ordinary skill in the art at the time the invention was made to space neighboring color filters apart from each at a given distance to improve display performance and prevent light leakage and color mixing.

2. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. ('728 B2) in view of Ogura et al. ('902 B1).

Per claim 2: Tanaka does not appear to have neighboring color filters overlapped with each other over the black matrix; however, Ogura has neighboring color filters overlapped with each other over a black matrix (Figs. 3E-3F).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tanaka in view of Ogura to provide a color filter substrate having good surface smoothness.

Per claim 3: Tanaka does not appear to have neighboring colored filters structured such that the peripheral portion of the overlying color filter is overlapped with the peripheral portion of the underlying color filter; however, Ogura does have this structure (Figs. 3E-3G). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tanaka in view of Ogura for surface smoothness.

Per claim 4: Tanaka does not appear to have peripheral portions of the overlying color filters overlapped with the peripheral portion of the underlying color filter as well as partially with the central portion of the underlying color filter; however, Ogura does have

such an arrangement (Fig. 3E). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tanaka in view of Ogura for surface smoothness.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. ('728 B2) in view of Moseley et al. ('141 B2).

Per claim 7: Tanaka does not appear to have color filters formed using a mask differentiated in light transmission while bearing a transparent, opaque, and semitransparent pattern of the mask being placed over the peripheral portion of the color filter during the formation of the color filter; however, Moseley does have a black mask of one of more layers having transparent and opaque regions (Col. 13, Lines 57-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teachings of Tanaka and Moseley to control light transmission.

4. Claims 8, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. ('728 B2) in view of Bae et al. ('688 B1).

Per claims 8 and 13: A substrate, gate lines formed on the substrate, data lines crossing over the gate lines while defining pixel regions, and a TFT formed at each pixel region (and electrically connected to gate and data lines) are common in the art. Tanaka has a thickness of the black matrix layer overlapping source bus lines that is less than the thickness of the color filter layer (Col. 7, Lines 15-17). Tanaka does not appear to have a plurality of contact holes exposing drain electrodes (of TFTs) and pixel electrodes connected to the drain electrodes through contact holes; however, Bae does

have a transparent pixel electrode connected via contact holes to a drain electrode of a driving device (Col. 6, Lines 55-57).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tanaka in view of Bae to facilitate electrical connections and to drive the LCD.

Per claim 12: The rejection of claim 5 applies to that of claim 12.

5. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Tanaka et al. ('728 B2) and Bae et al. ('688 B1) in view of Ogura et al. ('902 B1).

Per claim 9: Ogura has neighboring color filters overlapped with each other over pixel regions (Col. 12, Lines 28-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tanaka in view of Ogura to affect switching of pixel regions.

Per claims 10 and 11: The rejection as stated for claims 3 and 4 applies to claims 10 and 11.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. ('728 B2) and Bae et al. ('688 B1) in view of Moseley et al. ('141 B2).

Per claim 14: The rejection as applied to claim 7 applies to claim 14.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (703)305-7009. The examiner can normally be reached on M-F.

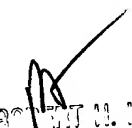
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-8741 for regular communications and (703)746-8741 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Jeanne Andrea Di Grazio

Robert Kim, SPE

JDG
January 23, 2003


ROBERT N. KIM
SUPERVISOR / PATENT EXAMINER
TECHNOLOGY CENTER